

Ministry of Agriculture & Land Reclamation **US Agency For Inti. Development Agriculture Policy Reform Program** Reform Design and Implementation

PN-207-183

وزارة للزراعة واستصلاح الأراضي الوكالة الأمريكية للتتمية الدولية مشروع إصلاح السياسات الزراعية وحدة تصميم وتنفيذ المسياسسات

Ministry of Agriculture and Land Reclamation

AGRICULTURE POLICY REFORM PROGRAM

Reform Design and Implementation Unit (RDI) USAID CONTRACT NO. 263-C-00-97-00005-00



APRP

Reform Design and Implementation Unit

Development Alternatives Inc. Group: Office for Studies & Finance, National Consulting Firm Development Associates, Cargill Technical Services, The Services Group, Training

Resources Group, Purdue Universities, University of Maryland

Report No. 154

Antiquities Study Phase II - Egypt APRP/RDI Unit

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November 2001

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Antiquities Study Phase II Egypt APRP/RDI Unit May-June 2001

DAI provided STTA for the period 5 May-7 June 2001 to complete Phase II of the APRP/RDI Antiquities Study. The Phase I Antiquities Study, completed in October 2000, culminated in a national workshop in Cairo and completion of a policy paper entitled, "Promoting Shared Responsibility for Antiquities Preservation in Egypt: A Strategy for Reducing Impacts Associated with Irrigated Agriculture and other Land Uses."

Building on this initial work, Phase II activities included:

- Preparing Guidelines for Addressing Potential Impacts on Egyptian Antiquities (Annex I), an addendum to Egypt's EIA Guidelines for Land Reclamation Projects.
- Preparing instructions and a survey form to be distributed to local antiquities offices to complete a Survey of Threatened Antiquities (Annex II). The purpose is to identify antiquities facing significant threats, help establish priorities for follow-up action; and provide an opportunity to share information with the various organizations and agencies that can play a role in protecting Egypt's antiquities.
- Organizing and facilitating the Workshop on High Groundwater in Antiquities Areas, held in Luxor 16-17 May 2001 (Annex III). Following several presentations, participants from Luxor, Qena, Aswan, and Sohag governorates met in groups to discuss threatened sites and the scope of the problem in their area, review and comment on the guidelines and survey form listed above, and identify next steps. One of the major achievements of the workshop is that participants agreed to establish inter-ministerial working groups to coordinate antiquities preservation measures at the governorate level. In addition, officials from the Ministry of Agriculture subsequently approached the Prime Minister to gain his support for on-going efforts. After travelling to Luxor to view the water damage at Luxor and Karnak temples, the Prime Minister issued a directive to establish a National Antiquities Working Group.
- Preparing Workshop Proceedings, including a revised participant list, agenda,
 PowerPoint slides from each of the speakers, and notes of the presentations given by the
 Working Groups. Proceedings were disseminated to participants and USAID 6 June 2000.
- Documenting a success story of measures taken immediately following the workshop by MILR, MALR, the Supreme Council of Antiquities, and Aswan Governorate to protect the Hierakonpolis archeological site in El Kom El Ahmar (Annex IV).

Recommended Next Steps:

- Workshop participants have shown considerable enthusiasm for launching Antiquities Working Groups at the National and Governorate levels. These groups would benefit greatly from continued support, particularly logistical help convening initial meetings and short-term technical assistance developing action plans. Given the impressive level of initiative demonstrated to date, the amount of support required to establish them on a permanent basis appears to be minimal.
- The Ministry of Culture should conduct a survey of threatened antiquities, supported by short-term technical assistance as needed to complete the survey, synthesize results, and identify next steps.

These feasible, high-priority activities will help create sustainable mechanisms for interministerial coordination on this important issue. Although relatively little further technical assistance appears to be required, it is crucial for ensuring that the groups make use of this initial momentum to establish a solid foundation for ongoing action.

Annex I

Guidelines for Addressing Potential Impacts on Egyptian Antiquities Addendum to the EIA Guidelines for Land Reclamation Projects

BACKGROUND

In 1996 the Egyptian Environmental Affairs Agency (EEAA) published "Guidelines for Environmental Impact Assessment (EIA)", followed by "EIA Guidelines for Land Reclamation Projects" in May 2000. Both require developers to identify and mitigate potential impacts on historic and cultural sites, including antiquities sites. This addendum seeks to provide more detailed guidelines to help government agencies and private sector developers comply with Egyptian laws related to antiquities protection.

This is not a stand-alone document. This document must be read with the EIA land reclamation guidelines (LRG) because it focuses only on impacts related to antiquities. Each antiquities guideline presented below is cross-referenced to the related section of the LRG [shown in brackets].

THE EIA PROCESS AND EIA REPORT [LRG sections 2 and 3]

Identifying Appropriate Expertise for the EIA Team

The EIA team must have access to reliable information on the location and status of antiquities which may be threatened by project activities. It is unlikely that the teams needs an archeologist for this research. If antiquities are present, it is more important to include experts who can assess the likelihood of changes in groundwater quality and levels, and who can design mitigation measures to protect antiquities (for example, an hydrologist, drainage and irrigation expert, and/or agricultural engineer, among others).

Scoping, Alternatives, and Consultation [LRG 2.3, 3.D.1, 3.D.2, 3.D.3]

During the site visit, the EIA team must consult the local Antiquities Inspectorate of the Supreme Council of Antiquities (SCA) to determine the location and status of antiquities potentially threatened by project activities. Archeologists working in the area are another good source of information.

According to the 1983 Antiquities Protection Law, antiquities are defined as follows.

Any real estate or chattel that reflects the arts, sciences, literature, and religion of civilizations from the pre-historic age until 100 years ago is considered an antiquity, provided that it is of value or of archaeological or historical importance as an aspect of a civilization which took place on Egyptian lands. Also human mummies and beings contemporary to them.

Summary of Article 1, Law No. 117, 1983

Antiquities for which the State finds a national interest in keeping and preserving are designated by a decree from the Prime Minister and entered into a registry maintained by the SCA. The EIA report should:

- Identify all known antiquities and archeological lands, and indicate their status as either "registered", "proposed for registration", or "not registered".
- Indicate if the antiquity is a designated or proposed UNESCO World Cultural Heritage Site.²
- Indicate if the antiquity or archeological land has been studied, and by which scientific or archeological organization.

Only a small portion of Egypt's antiquities and archeological lands have been discovered and officially registered; therefore, checking the registry is insufficient to adequately identify antiquities in the project area and assess their importance. The local Antiquities Inspectorate must also be consulted.

If information collected at this stage suggests the potential for unacceptable damage to important antiquities, the team should consider alternative site locations, alternative site boundaries to create a buffer zone, and changes to the proposed project design.

Baseline Environmental Conditions [LRG 2.4 and 3.E]

The location and status of antiquities identified during the scoping stage (and later stages) should be documented. Antiquities areas should be clearly identified on project maps, with their boundaries delineated as accurately as possible.

Any existing water damage to antiquities near the project site should be clearly described and documented with photos. Signs of water damage to monuments include cracks, salt deposits, water stains, crumbling and erosion, and shifting. Standing water may also be visible. If possible, photos should be taken when water levels are highest (August-October).

Data on groundwater levels at and around the project site should be collected over a period of time to show seasonal fluctuations. Some antiquities sites already have piezometers in place for this purpose.

Prediction of Impacts [LRG 2.5 and 3.F]

Examples of land reclamation and agriculture activities that cause impacts include excavation of drains and canals in antiquities areas, and irrigation of crops on or near antiquities. Direct and indirect impacts to above-ground and below-ground antiquities should be fully described and quantified wherever possible. Potential impacts on antiquities include cracks, salt deposits, water stains, crumbling and erosion, and structural shifts; as well as potential changes in groundwater levels, drainage, salt concentrations in soil and water, and the soil profile.

In addition to the Antiquities Registry, the SCA has established a Geographic Information System (GIS) for Islamic buildings in Old Cairo. Eventually, this GIS may be expanded to include other antiquities.

As of June 2001, World Heritage Sites in Egypt include Memphis and its Necropolis (the pyramid fields from Giza to Dashur), Ancient Thebes with its Necropolis, Nubian monuments from Abu Simbel to Philae, Islamic Cairo, and Abu Mena. Sixteen other antiquities sites have reportedly been proposed for inclusion.

Evaluation of Impacts [LRG 2.6 and 3.F]

In this phase, potential impacts are evaluated to determine the *severity* of the potential damage and its *significance*.

The severity of damage is based on its magnitude, duration, and extent, and whether the damage is temporary or permanent. Most water damage to antiquities is irreversible, and can quickly become severe in the absence of mitigation measures. For example, eroded artistic carvings and painting can not be restored. Saline drainage water accumulated in top soil is highly corrosive and quickly absorbed by dry monument stones, causing visible damage within a few years. Thus, agriculture and irrigation projects that lack measures to prevent poor drainage and a rise in the water table are likely to cause severe damage to nearby antiquities.

The significance of a potential impact on an antiquity is determined by both the severity of the potential damage and the economic and cultural value of the antiquity. If the antiquity is visited by tourists, the economic value is determined by: 1) receipts from ticket sales, and 2) indirect effects in the tourism sector and other sectors of the economy³. The potential for future tourism must also be considered, because tourism is one of Egypt's fastest growing sectors, and lesser known antiquities will increasingly be developed for tourism to alleviate pressure on existing tourist sites. The cultural value of any potentially threatened antiquity should be assessed using criteria established by the Supreme Council of Antiquities. In addition, the assessment of cultural value should be conducted in consultation with a trained archeologist who specializes in Egyptian antiquities, preferably an archeologist knowledgeable of the threatened site.

Significant potential impacts are generally unacceptable and must be mitigated.

Mitigation [LRG 2.7, 3.G]

The project design should incorporate mitigation measures for all unacceptable potential impacts, so that actual impacts will be prevented entirely, or reduced to an acceptable level. Examples of mitigation measures that minimize impacts from agriculture and irrigation projects include the following:

Strategies to improve drainage and de-water the top two meters of valley sediments:

- Require farmers to install gated pipe irrigation systems on farms.
- Establish a buffer zone around important antiquities, in which agriculture is prohibited or limited to low-impact activities.
- Require farmers to plant less water-consuming crops.
- Line irrigation canals to reduce seepage.
- Install and maintain a shallow drainage system.

Strategy to lower the water table and reverse the direction of groundwater flow away from antiquities:

According to a June 2000 study completed by the Egyptian Center for Economic Studies, tourism revenues comprise 4.4% of Egypt's GDP (\$3.6 billion). Adding indirect effects, the total contribution reaches 11.6% of GDP (\$9.6 billion).

 Design and install proper groundwater extraction wells, based on engineering feasibility studies.

Other mitigation measures:

- In some cases, the most cost-effective mitigation measure is to identify an alternative location for the proposed agriculture project, a safe distance from important antiquities. This alternative needs to be considered early in the project design process.
- In rare cases, the antiquity structures can be relocated, as with Abu Simbel during construction of the Aswan High Dam. However, moving threatened monuments is unlikely to be cost-effective unless the proposed agriculture project benefits are extremely large, the antiquity is extremely valuable, and impacts are otherwise unavoidable.
- If evidence suggests that the threatened antiquity is of little cultural or economic value, mitigation may be limited to scientific study, selective salvage, and preservation in a museum.
- In all cases, mitigation measures should be fully justified in the EIA report, incorporated into all relevant project design documents, and approved by the Supreme Council of Antiquities.
- The EIA report should include recommendations for monitoring impacts on antiquities. Examples of monitoring "indicators" include: 1) photos of antiquities near the project site, taken at regular intervals to identify new water damage and monitor rates of deterioration; and 2) data on seasonal groundwater levels at and around the project site. Baseline data should be collected during the EIA for all indicators included in the monitoring plan.

RECOMMENDED DISCUSSION QUESTIONS

- 1. What is the current status of SCA's Antiquities Registry? How complete is it? What criteria are used to determine if an antiquity is eligible for inclusion in the registry? Should it be updated to become a more reliable source of information on the location and status of antiquities?
- 2. Do formal criteria exist for assessing the cultural value of specific Egyptian antiquities? If not, how should an EIA team determine if an antiquity is important?
- 3. Should SCA review EIAs and proposed mitigation measures for land reclamation projects near antiquities? If yes, under what circumstances? What authority should they have to stop a project that may cause unacceptable impacts?

REFERENCES

- Colby, Michael and Hany Shalaby, "A Conceptual Framework for Area-Wide Environmental Assessment, with Special Reference to Irrigated Agriculture in Egypt," USAID-funded Egyptian Environmental Policy Program, *draft*, July 2000.
- Egyptian Antiquities Organization, "Law No. 117 of the Year 1983 Concerning the Issuance of Antiquities Protection Law," Official Gazette, 11 August 1983.

Annex II

Survey of Threatened Antiquities in Egypt USAID-funded Agricultural Policy Reform Project (APRP) May 2001

Background

In many locations throughout Egypt, particularly in the Nile River valley, antiquities are threatened by a rising water table and high salt concentrations in groundwater and surface soils. These threats represent a conflict between three important resources: antiquities, agricultural land, and irrigation water.

In August-September, 2000, the U.S. Agency for International Development (USAID) and the Egypt Ministry of Agriculture and Land Reclamation (MALR) sponsored a two-month study under the Agriculture Policy Reform Project (APRP) to identify a strategy for reducing irrigation impacts on several cultural heritage sites in Luxor. The central theme that emerged is the need to promote a vision of shared responsibility for antiquities preservation in Egypt, because it is beyond the authority and capacity of the Ministry of Culture to address impacts originating from off-site activities. Environmental Impact Assessments (EIAs) and land-use planning were identified as key mechanisms for sharing responsibility.

Egypt's EIA laws and guidelines require government agencies and firms to identify and mitigate potential impacts on antiquities for all proposed development projects. The Egyptian Environmental Affairs Agency (EEAA) reviews EIAs; however, primary responsibility for designing and implementing mitigation measures lies with the developer. For example, MALR and the Ministry of Irrigation and Water (MIWR) are required to establish and enforce their own internal project appraisal policies and procedures to minimize threats to antiquities posed by agriculture, land reclamation, and irrigation projects. Both agencies have taken an important first step by establishing EIA units.

Governorates can play a key role by identifying the best mix of land-use planning policies and mitigation measures to reconcile competing resources, so that agriculture, cities, and antiquities can each flourish. Examples of land-use policies include establishing "buffer zones" around important antiquities in which only low-impact activities are allowed, and identifying crops that consume less water. Mitigation measures include installing gated pipe irrigation systems on farms to reduce water applications and improve crop yields, and lining canals to reduce seepage. Governorates can also play an important role in reviewing EIAs and monitoring the effectiveness of mitigation measures.

In follow-up to the September 2000 Luxor antiquities study, the APRP project is working with the Government of Egypt to bring various stakeholders together to engage in joint-problem solving. Phase II activities include:

- hosting a workshop in Luxor to raise awareness about groundwater impacts on antiquities associated with irrigated agriculture and poor drainage;
- drafting and achieving consensus within MALR on 1) policies and procedures for conducting EIAs during the project design phase and ensuring that subsequent project approval and implementation decisions comply with requirements to minimize adverse

- impacts; and 2) detailed guidelines for preparing the antiquities component of EIAs for agriculture and land reclamation projects;
- establishing Antiquities Preservation Task Forces at the national and governorate levels to coordinate efforts to reduce threats to antiquities; and
- conducting a survey to identify antiquities facing significant threats.

Purpose of Survey

This survey has been designed to identify antiquities facing significant threats, to help establish priorities for follow-up action. It is an opportunity to share information with the various organizations and agencies that can play a role in protecting Egypt's antiquities.

Instructions

Survey:

Please complete a separate survey for each antiquity site and return by June 20th. Make copies of this survey if you are reporting on several sites.

If you prefer to receive an electronic version of this survey in Microsoft Word format, please call (202)3370473 or 3375712, or e-mail Lorene Flaming@dai.com.

Supporting Documents

We would also appreciate receiving any supporting documents you can provide, especially maps showing location and surrounding land uses, hydrology reports, and financial reports on annual tourism receipts (if any).

Photos

Enclosed is a camera containing film for 24 pictures. Please take photos of the most significant visible water damage to the antiquity. In addition, take a *few* photos of any surrounding land uses (agriculture, irrigation networks, human settlements) and natural features (rivers) that you think may contribute to the damage. If possible, take photos that show the distance between the antiquity and surrounding land uses. Complete the attached photo log at the time you take each picture, to help us accurately interpret them. When finished, kindly return the camera and we will process the film.

Using the enclosed envelope, please return the survey, supporting documents, camera, and photo log to:

[to be determined]

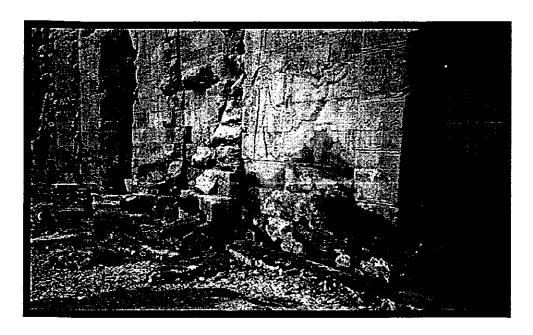
Survey of Threatened Antiquities in Egypt

Or Str Of Of	ame of person completing survey: ganization: reet address: fice phone: fice fax: mail address:
1.	Name and brief description of antiquity:
2.	Cultural importance: UNESCO site, proposed or potential UNESCO site, focus of archeological investigations, not studied.
3.	Economic importance: major tourist attraction, some tourism, little or no tourism. Amount of annual receipts from ticket sales: LE, data estimated or confirmed? (circle one). Number of visitors each year:, data estimated or confirmed? (circle one).
4.	Location of antiquity (provide a map if possible):
5.	Description of impacts observed:salt deposits,deterioration of artistic features,structural instability or collapse,flooding,theft,other.
6.	Potential causes:rising water table from irrigated agriculture,sewage impacts from urban development,other.
7.	Description of surrounding land-uses and proximity:meters to houses,meters to urban development,meters to agriculture,meters to industrial development.
8.	Main crops grown in vicinity:
9.	When was water damage first observed?
10.	Is the rate of deterioration from water changing? If yes, since when and why?
11.	Have any studies been conducted to assess water impacts or identify mitigation measures? If yes, please provide author, organization, report title, and year of each study.
12.	Have any mitigation measures been implemented? If yes, briefly describe the measures, indicate if they have been effective, and identify who implemented them.
13.	What other individuals and organizations could provide additional information on existing and potential threats to this antiquity?
14.	Are you interested in participating in an Antiquities Preservation Task Force to help coordinate efforts to reduce threats to antiquities in your governorate?
15.	What other organizations and government agencies should be invited to join this task force? Provide names of individuals and contact information, if possible.

Antiquities Photo Log

Name of Antiquity: Photographer: Title:		
Organization: Date:		
No.	Description	
1		
2		
3		
4		
5		
6		
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19		

Examples of Photos



Water Damage at Temple of Khrum, Esna



Land Surrounding the Temple of Dendarah, Qena

Annex III

AGENDA

Workshop on the High Water Table in Antiquities Areas

May 16-17, 2001 Sonesta Hotel, Luxor

Workshop Goals

- To present impacts of agriculture and reclamation projects on antiquities.
- To discuss possible solutions:
 - canal lining
 - agricultural, irrigation, and drainage practices, especially on-farm irrigation practices
- To reach agreement on next steps.

Workshop Agenda

May 16

10:00 a.m. Workshop Introduction

Dr. Saad Nassar, President, ARC and Program Director for APRP

Dr. Gabala Ali Gaballa, Head, Supreme Council of Antiquities

Mr. Willard Pearson, USAID Director in Egypt

Eng. Gamil Mahmoud El Sayed, Head of Executive Committee, Water Policy Advisory Unit, MWRI

Dr. Abdel-Wahab Allam, Deputy Director, Agriculture Research Center

10:30 a.m. Session 1: Impacts of Agricultural and Reclamation Projects on Antiquities

 Agricultural Policies and Practices that contribute to High Water Table: Agriculture in Luxor; sugarcane production and irrigation practices

Engineer Aayad Thabet, Upper Egypt APRP Branch Manager

 Examples of Impacts on Antiquities and Summary of the Economic Importance of Antiquities

Ms. Lorene Flaming, RDI Consultant/Environmental Specialist

 Case Study 1: Accelerating Impacts of Land Reclamation on the Hierakaonpolis Expedition at Edfu

Dr. Renee Friedman, the British Museum and Milwaukee Public Museum

Case Study 2: Theban Mapping Project

Dr. Ted Brock, Archeologist

11:30 a.m. Break

11:45 a.m. Small Group Discussions to Exchange Perspectives on the Problem, Causes, and Possible Solutions

Discussion of threatened sites and scope of problem in Sohag, Qena,
 Luxor and Aswan Governorates

Solicitation of feedback on proposed survey questionnaire on antiquities currently threatened by agriculture

May 16 afternoon

12:30 p.m.

Working Group Reports

1:15 p.m.

Lunch

2:30 p.m.

Session 2: Possible Solutions

Agricultural Strategies for Reducing Water Applications

Dr. Abdel Wahab Allam, Deputy Director, ARC

Potential Engineering Solutions for Lowering the Water Table

Dr. Fatma Abdel Rahman, Head of Groundwater Sector, MWRI

 Overview of Existing Egyptian EIA Requirements for Land Reclamation Projects

Ms. Lorene Flaming, RDI Consultant

3:15 p.m.

Break

3:30-5:00 pm

Questions and Answers

6:00 p.m.

Luxor Temple Site Visit

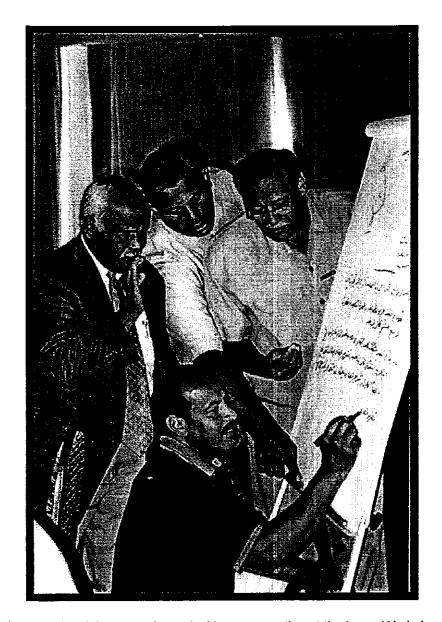
Guided tour of impacts associated with the high water table, including discussion of mitigation measures implemented to date

Structural Engineer working with the Chicago House

May 17 th	
9:00 a.m.	Session 3: Reaching Agreement on Next Steps
	Wrap-up of previous day's activities and summary of issues
	Steve Joyce, APRP facilitator
9:30 a.m.	Establishing a Sustainable Process: small group sessions to develop Action Plans to address issues
	Introduced by Dr. Abdel-Wahab Allam, Deputy Director, ARC
10:30 a.m.	Coffee Break
10:45 a.m.	Groups Present Action Plans
	 Recommendations for Lead Responsibility
	 Working Group Action Plans
12:00 p.m.	Summary of Workshop Conclusions and Recommendations
	Next Steps

12:30 p.m.

Closure



Mapping out an inter-ministerial strategy for antiquities preservation at the Luxor Workshop on High Groundwater in Antiquities Areas, May 2001: Mr. Ibrahim Soliman, General Director of Antiquities in Gurnah, West Bank, Luxor; Mr. Mohamed Awad Allah, General Director of Agriculture Administration, Luxor; Mr. Hisham Mahmoud, General Director of Antiquities at Karnak; and Mr. Aayad Thabet, RDI Unit, Branch Manager in Luxor.

Annex IV

Agricultural Policy Reform Project (APRP) REFORM DESIGN AND IMPLEMENTATION UNIT (RDI)

SUCCESS STORY

Aswan Working Group Protects Antiquities Site

May 24, 2001

Following the Agriculture and Antiquities Workshop in Luxor May 16 and 17, the Aswan Governorate Working Group on Antiquities met in Kom Ombo on May 23, 2001 to discuss the position of a drain that threatened an important antiquities area. The Working Group is composed of engineers from the Aswan Directorates of the MALR, MWRI, and the Supreme Council of Antiquities. The site is known as Hierakonpolis, a 6,000-year old prepharaonic site in El Kom El Ahmar, Esna District. The Palette of Narmer and the remains of the world's oldest free-standing mudbrick structure have been found here, along with several other important antiquities. At the meeting in Kom Ombo, the Working Group agreed to reposition a proposed drain to skirt the borders of the antiquities area, thereby saving the site from 1) immediate disturbance from drain construction activities, and 2) future drainage and groundwater impacts. Drainage plans will be officially altered and delivered to the General Authority for Land Reclamation and Agricultural Development, after which a formal survey will take place.

The actions of the Aswan Working Group are a tangible outcome of the workshop in Luxor, and an excellent example of inter-agency collaboration and sharing responsibility for antiquities preservation.